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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,007	07/30/2001	Kazunobu Kubota	7217/65184	1045

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LERNER, DAVID, LITTENBERG,
KRUMHOLZ & MENTLIK
600 SOUTH AVENUE WEST
WESTFIELD, NJ 07090

EXAMINER	
FAULK, DEVONA E	
ART UNIT	PAPER NUMBER
2615	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/918,007	KUBOTA, KAZUNOBU	
	Examiner	Art Unit	
	Devona E. Faulk	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,12-14,24-26 and 36-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,12-14,24-26 and 36-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/11/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 12/11/2006, with respect to the rejection(s) of claim(s) under 103(a) have been fully considered and are persuasive regarding prior art Mayer. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Fouad (US 6,728,664).

2. Applicant's arguments filed 12/11/2006 have been fully considered but they are not persuasive. In response to applicant's argument that Sasson is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Sasson was cited for discloses a time period that is an integral multiple of the period of sample frequency. This has to do with sampling which is applicable to many areas. The examiner is maintaining her rejection regarding the use of the prior art Sasson.

3. Claims 3-11, 15-23,27-35 are cancelled.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims **1,2,13,14,25,26,32,37-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA, pages 1-4, Description of Related Art; Figure 4) in view of Fouad (US 6,728,664) in further view of Sasson (US 4,695,874).

Claims **1, 13 and 25** share common elements.

Regarding **claims 1,13 and 25**, the AAPA discloses an audio signal processing method (Pages 1-4, Description of Related Art; Figure 4) that performs virtual acoustic image localization processing of digital audio signals based on at least one type of information among position information, movement information, and localization information of an acoustic image (pages 1-3, Description of Related Art; Figure 4), the method comprising the steps of:

when there are a plurality of changes in said information within a prescribed period of time, generating a modified information (1, Figure 4; page 3, Description of Related Art; AAPA, Figure 7 teaches of a plurality of changes (position,movement) in what is implicitly some time frame. The applicant's admitted prior art teaches that localization processing of a plurality of virtual acoustic images is performed within the audio processing unit each time there is a change in the position or movement information and that the position and movement information is used to perform virtual acoustic image localization. Each time denotes a given time unit. For a given time unit one change in position or movement generates a single modified information) ; and

performing virtual acoustic image localization processing for said audio signals based on said generated information change (pages 1-3, Description of Related Art).

The AAPA discloses making a change at the end of a period of time (Figure 7). Each time a change is made, it is at the end of some period of time.

AAPA fails to disclose a single change based on said plurality of information. Fouad discloses a single change based on a plurality of changes (column 9, lines 8-12; sound node moves a sound to a location based on the value of three input parameters to the node).

It would have been obvious to modify the AAPA so that a single change is made based on a plurality of changes as taught by Fouad in order to provide a synthesized sound environment to the user.

It is implicit that the time unit relates to the sampling period in some manner.

Regarding claims 1,13 and 25, AAPA as modified by Fouad fails to disclose that the time unit is an integral multiple of the sampling period of said digital signals. Furthermore how one period of time relates to a sampling frequency is a matter of how a system is designed. The concept of a time unit being an integral multiple of a sampling period is well known in the art as taught by Sasson.

Sasson discloses a time period that is an integral multiple of the period of sampling frequency (column 6, lines 9-12).

It would have been obvious to modify AAPA as modified by Fouad by having the time period be an integral multiple of the sampling period so that less costly timing or synchronization components can be used.

Claims 37-39 share common features.

Regarding **claims 37-39** the AAPA discloses an audio signal processing apparatus (Figure 1), comprising:

an audio signal processing unit for performing virtual acoustic image localization processing of digital audio signals based on at least one information type among position information, movement information, and localization information of an acoustic image (2, Figure 4); and

information change generation means for generating, when a plurality of changes are made to said information within a prescribed time unit, single modified information within said prescribed time period (1, Figure 4; page 3, Description of Related Art; The applicant's admitted prior art, Figure 7 teaches of a plurality of changes in what is implicitly some time frame. For AAPA teaches that localization processing of a plurality of virtual acoustic images is performed within the audio processing unit each time there is a change in the position or movement information and that the position and movement information is used to perform virtual acoustic image localization. Each time denotes a given time unit. For a given time unit one change in position or movement generates a single information.), wherein

said audio processing unit is controlled based on the single modified information generated by said information change generation means, to perform virtual acoustic image localization processing of said digital audio signals (pages 1-2, Description of Related Art) .

Regarding claim 39, the AAPA further discloses a storage means (3, Figure 4) for storing a plurality of synthesized audio signals obtained form localization processing.

The AAPA discloses making a change at the end of a period of time (Figure 7). Each time a change is made, it is at the end of some period of time.

AAPA fails to disclose a single change based on said plurality of information. Fouad discloses a single change based on a plurality of changes (column 9, lines 8-12; sound node moves a sound to a location based on the value of three input parameters to the node).

It would have been obvious to modify the AAPA so that a single change is made based on a plurality of changes as taught by Fouad in order to provide a synthesized sound environment to the user.

It is implicit that the time unit relates to the sampling period in some manner.

AAPA as modified by Fouad fails to disclose that the time unit is an integral multiple of the sampling period of said digital signals. Furthermore how one period of time relates to a sampling frequency is a matter of how a system is designed. The concept of a time unit being an integral multiple of a sampling period is well known in the art as taught by Sasson.

Sasson discloses a time period that is an integral multiple of the period of sampling frequency (column 6, lines 9-12).

It would have been obvious to modify AAPA as modified by Fouad by having the time period be an integral multiple of the sampling period so that less costly timing or synchronization components can be used.

Regarding **claims 2,14 and 26,** AAPA as modified by Fouad and Sasson fails to explicitly teach wherein the step of generating a single information change is performed using only a last one of said information elements presented within said time unit. For a given time unit one change in position or movement generates a single information. Last is defined as most recent. This one change reads on last information change. It would have been obvious to generate a single information change using only the information presented last within said time unit to reproduce virtual image localization information using the most recent data.

6. **Claims 12,24, and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Pages 1-4, Description of Related Art; Figure 4) as applied to claims 1,13 and 25 above and Fouad (US 6,728,664) as applied to claims 1,13 and 25 above and Sasson (US 4,695,874) as applied to claims 1,13 and 25 above, in further view of Inanaga et al. (US 5,796,843).

Regarding **claims 12,24 and 36,** the AAPA as modified by Fouad and Sasson fails to disclose but wherein the information for said audio signals can be modified according to user operations. Inanaga teaches of wherein the information for said audio signals can be modified according to user operations. The applicant's admitted prior art teaches of a game and that position, movement, fluctuation, other control information is received from external equipment (Figure 4) but fails to disclose that information for said audio signals can be modified according to user operations. Inanaga discloses a video signal and audio signal reproducing apparatus that corrects an audio signal with respect to a relative movement of user and a head movement of the listener with

respect to a virtual sound source from a video reproducing means (column 4, lines 15-20). It would have been obvious to modify the AAPA as modified by Fouad and Sasson so that information for the audio signals can be modified according to user operations as taught by Inanaga in order to reproduce virtual localization information in real time.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848.

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615.The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

DEF